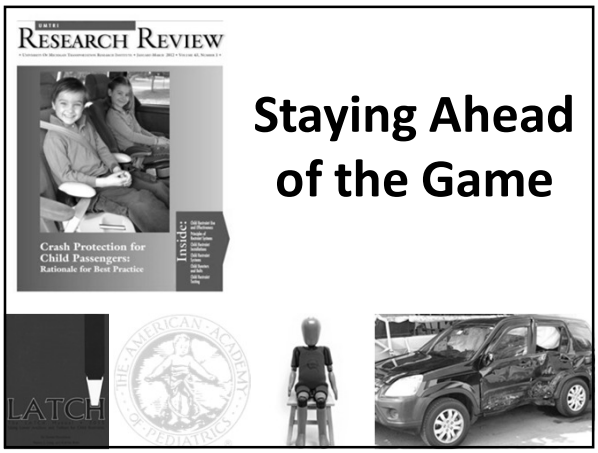
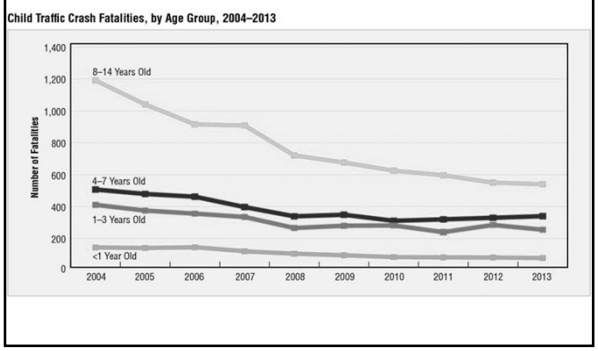


Staying Ahead of the Game

Fatal Crashes

Child Fatalities – 2004-2013



EACH DAY IN 2013

- **3 children killed**
  - **1,149 (2% decrease)**
- **470 children injured**
  - **172,000 (2% increase)**

Children Killed – Restraint Choice

Infants and Toddlers Killed in Passenger Vehicles, by Type of Restraint and Age Group, 2013

Type of Restraint	Age				Total	
	<1 (Infants)		1–4 (Toddlers)			
	Number	Percent	Number	Percent	Number	Percent
None Used	11	21%	69	31%	80	29%
Adult Seat Belt	2	4%	17	8%	19	7%
Child Seat	35	67%	122	54%	157	56%
Restraint Used—Unknown	0	0%	4	2%	4	1%
Unknown	4	8%	14	6%	18	6%
Total	52	100%	226	100%	278	100%

Source: FARS 2013 ARF.

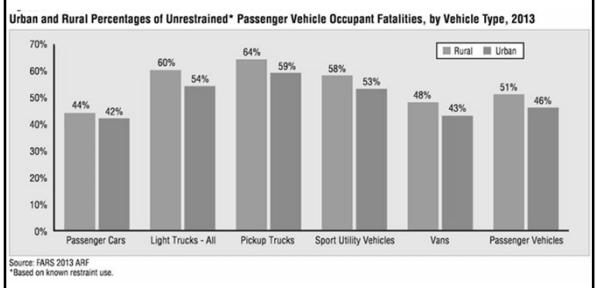
Children Killed – Race/Ethnicity

Child Restraint Use, by Age Group and Race/Ethnicity, 2013

Race/Ethnicity	Age Group (Years)			
	<1	1-3	4-7	8-12
Hispanic	96%	91%	85%	87%
African-American Non-Hispanic	96%	85%	78%	69%
White Non-Hispanic	100%	99%	96%	95%
Asian Non-Hispanic	NA	95%	93%	86%
Other Non-Hispanic	NA	95%	91%	88%

Source: Pickrell, T. M., & Choi, E-H. (2014, June). *The 2013 national survey of the use of booster seats.* (Report No. DOT HS 812 037). Washington, DC: National Highway Traffic Safety Administration.
NA: Data not sufficient to produce a reliable estimate.

Urban vs Rural - Unrestrained



North Dakota Fatality Breakdown

- **136 Rural (92%)**
- **12 Urban (8%)**
- **0 Unknown (investigations/reporting)**
- **148 TOTAL**

What Are REAL Parents Doing?

National Poll on Children's Health

Report Highlights

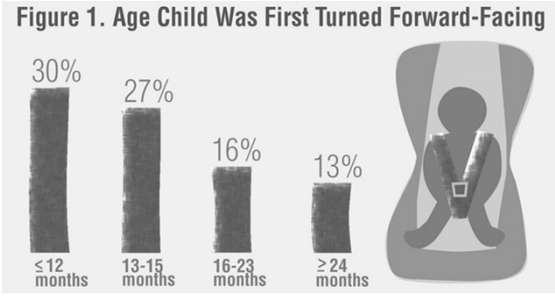
73% of parents turned their child forward-facing before their child was two years old.

30% of parents turned their child forward-facing before their child reached one year of age.

Parents most often look to car seat packaging and health care providers for information on when to turn their child's car seat to face forward.

September 19, 2011
CS Mott Children's Hospital
National Parent Survey

Turnaround Time Breakdown



September 19, 2011
CS Mott Children's Hospital
National Parent Survey

March 2012 AAA Parent Survey

AAA Survey Reveals "Boost" in Car Seat Compliance

- **1 Year after AAP change**
- **90% of parents aware of new guidelines**
- **Many heard change from pediatrician**
- **35% changed how child under 13 rides**
- **82% with child under 2 need no change**

March 2013 U-M Parent Survey

C.S. Mott Children's Hospital
National Poll
on Children's Health

- **24% reported that child was turned around at or before 12 months**
- **23% reported waiting to turn until the child was 2 years old or older**
- **Nearly half of 4- to 7-year-olds do not use the recommended restraint for their age**

Restraint Choice: Under Age 1

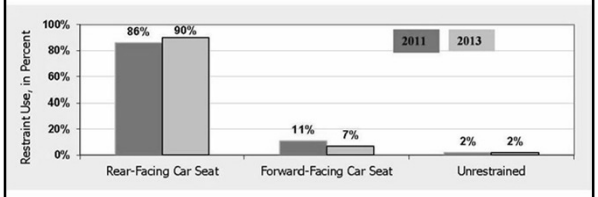


Figure 5: Restraint Use for Children Under Age 1

Restraint Choice – Ages 1-3

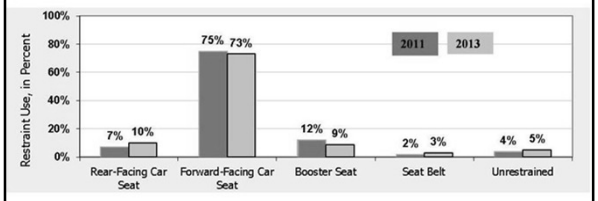


Figure 6: Restraint Use for Children 1 to 3 Years Old

Restraint Choice – Ages 4-5

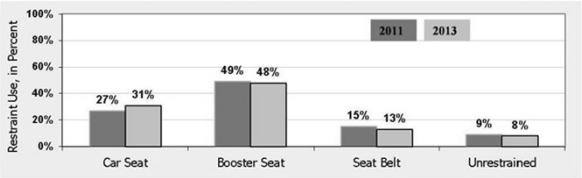


Figure 3: Restraint Use for Children 4 and 5 Years Old

Restraint Choice – Ages 6-7

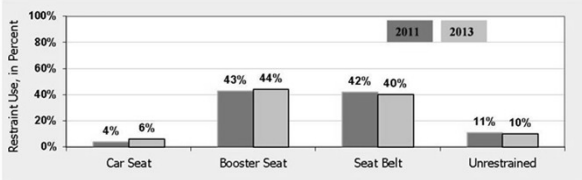


Figure 4: Restraint Use for Children 6 and 7 Years Old

Booster Trend – Ages 4-7

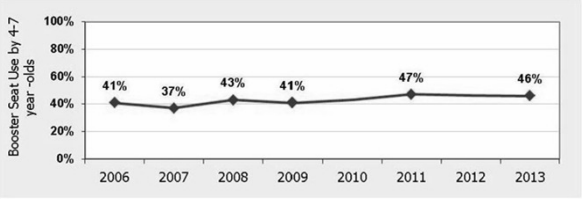


Figure 1: Booster Seat Use, National Estimates

Restraint Choice – Ages 8-12

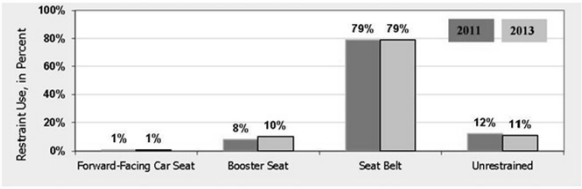


Figure 8: Restraint Use for Children 8 to 12 Years Old

Side Impact Testing

Vehicle to Vehicle Side Impacts

1) **The striking vehicle begins crushing the door structure of the struck vehicle and intrudes into the vehicle compartment.**
2) **As the striking vehicle begins to push the struck vehicle away, an occupant experiences that vehicle motion and the door intrudes towards him or her.**
3) **The occupant is struck by the intruding door and is then accelerated away from the door.**

Focus Increased in 2007

Different Testing Approaches

FMVSS 213 Side Impact ATD: NPRM


FEDERAL REGISTER

Vol. 78 Thursday,
No. 225 November 21, 2013

Part II

Department of Transportation

National Highway Traffic Safety Administration

49 CFR Part 572

Anthropomorphic Test Devices; 42th 3-Year-Old Child Side Impact Test Dummy, Incorporation by Reference; Proposed Rule

- **Original regulatory process began in 2002 with lots of missing information**
- **Current dummies are built for frontal testing – not for lateral impacts**
- **NHTSA proposed using this Q3s dummy (3-year-old) to test CRs with new side impact performance requirements**

FMVSS 213 Side Impact Test: NPRM


FEDERAL REGISTER

Vol. 79 Tuesday,
No. 18 January 28, 2014

Part III

Department of Transportation

National Highway Traffic Safety Administration

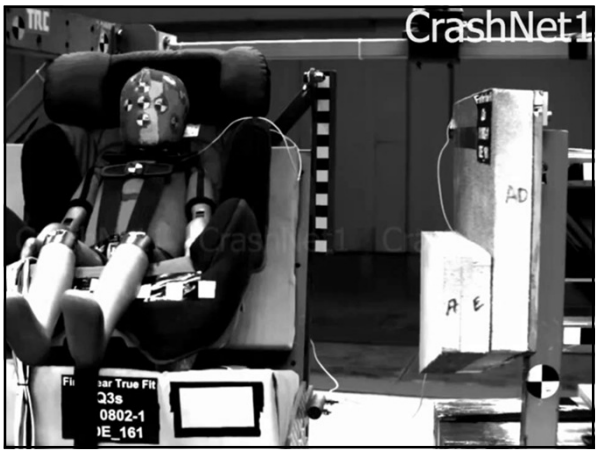
49 CFR Part 571

Federal Motor Vehicle Safety Standards; Child Restraint Systems; Child Restraint Systems—Side Impact Protection; Incorporation by Reference; Proposed Rule

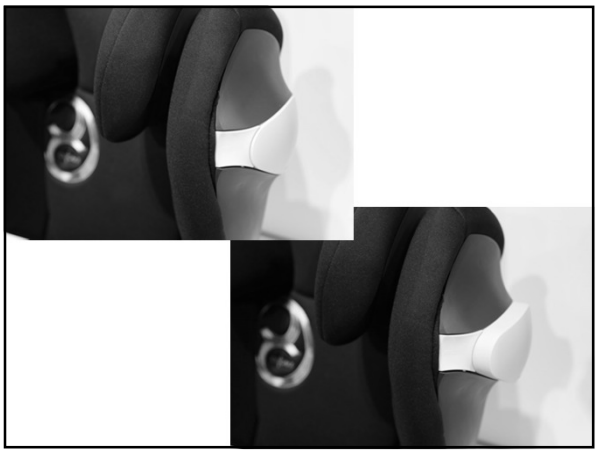
- **Side impacts almost equal to frontal crashes as a source of fatalities and serious injuries to children ages 0 to 12**
- **Congress mandated the Secretary of Transportation to improve the side impact protection of children in CRs**
- **Will amend FMVSS 213 to include side impact performance requirements**

Proposed Standard

- Restraints for child weights up to 40 pounds
- 12-month old and new 3-year-old (Q3s) ATDs
- Boosters may or may not be included
- Minimum level of protection in side impacts
- Prevent harmful head contact with an intruding vehicle door or CR structure
- Reduce crash forces on head and chest



Side Impact Protection



What Seat Should I Get NOW?

- **It is a PROPOSED standard and it is likely to change (perhaps dramatically) before it is finalized and in effect**
- **Most major manufacturers are using it for research and development, but continue to test with other methods**
- **Some manufacturers share limited information about their side impact testing**
- **At this point, advocates don't have access to enough information to form accurate answers**

FMVSS 225 Vehicle Anchor Changes

LATCH Usability Research 2012

- Depth, clearance
- Force required to install
- Real caregivers were 19 times more likely to correctly install in vehicles that met all criteria over those that met none

UMTRI

Congressional Requirement

SEC. 31502. CHILD RESTRAINT ANCHORAGE SYSTEMS.

(a) Initiation of Rulemaking Proceeding- Not later than 1 year after the date of enactment of this Act, the Secretary shall initiate a rulemaking proceeding to amend Federal Motor Vehicle Safety Standard Number 225 (relating to child restraint anchorage systems) to improve the ease of use for lower anchorages and tethers in all rear seat seating positions if such anchorages and tethers are feasible.

(b) Final Rule-

(1) IN GENERAL- Except as provided under paragraph (2) and section 31505, the Secretary shall issue a final rule under subsection (a) not later than 3 years after the date of enactment of this Act.

(2) REPORT- If the Secretary determines that an amendment to the standard referred to in subsection (a) does not meet the requirements and considerations set forth in subsections (a) and (b) of section 30111 of title 49, United States Code, the Secretary shall submit a report describing the reasons for not prescribing such a standard to--

(A) the Committee on Commerce, Science, and Transportation of the Senate; and

(B) the Committee on Energy and Commerce of the House of Representatives.

FMVSS 225 Revision: NPRM


FEDERAL REGISTER

Vol. 80 Friday,
No. 15 January 23, 2015

Part II

Department of Transportation

National Highway Traffic Safety Administration
49 CFR Part 571
Federal Motor Vehicle Safety Standards; Child Restraint Systems; Child Restraint Anchorage Systems; Incorporation by Reference; Proposed Rule

- Angle Clearance
- Attachment Force
- Anchor Depth
- Removing Exemptions
- Standard Markings
- Tether anchor design, zone, accessibility
- LATCH in center position or third row

NHTSA: Request for Comments

"We have tentatively determined that the benefits of tether use for all children in the subject CRSs (regardless of child weight) outweigh the risks occurring from tether anchorage failure due to a higher combined weight and/or a higher severity crash. Thus, we believe that tethers should be attached regardless of child weight in forward-facing CRSs with internal harnesses."

IMPORTANT: Technicians CANNOT override manufacturer limits today. This is ONLY a request for comments demonstrating tether benefits.

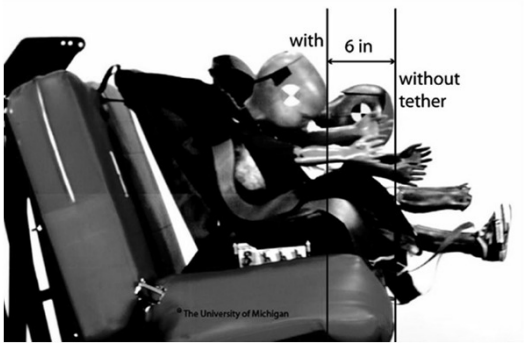
Misuse Studies

Top Tethers Improve Performance

NHTSA & Multiple Studies

- **Tether is the part with the greatest potential for preventing deaths or reducing injuries**
- **Should be used with LA or belt installation FF**

Tethered vs Untethered



Tethered vs. Untethered

INSURANCE INSTITUTE
FOR HIGHWAY SAFETY

New IIHS Survey – April 2013

- **479 Driver Interviews / Observations**
  - **56% of FF CRs installed with the tether**
  - **39% with tether used correctly**
- **Lower Anchors & Seat Belt Differences**
  - **71% use with (LATCH) lower anchors**
  - **33% use with seat belt installations**

IIHS Interviews

Top reasons for not using tether	percent
didn't know it was there	22
didn't know how to use	15
in a hurry/not enough time	13
unsure where to attach it	10
not important or needed	9
didn't know they had anchor	8

New Hospital Study

- 267 New parents - 93% Misuse
- Average of 4 errors per seat
- Families who worked with a tech 10x less likely to have critical errors
- Increased risk factors
  - lower socioeconomic status
  - less educated
  - non-white
  - did not speak English
  - unmarried or without a partner

New NHTSA Misuse Study

- Redefined misuse for study purposes
  - Harness height had to be 2" off
  - Installation had to allow 3" of lateral movement
  - Recline was OK if between 30 & 45 degrees
- Definite potential for inconsistency
  - Different teams
  - Some researchers were techs / others were not
  - Manufacture instructions were not consulted
  - Some seat movement measured with kids in CR, others with CR empty

Resulting Highlights as Reported

- 46% Misuse Rate
- 24% ages 4-7 prematurely graduated
  - 9% unrestrained
- 16% of rear-facing only seats at wrong angle
  - 12% of rear-facing convertibles
- 17% of FF seats were loose
- 12% of backless booster had lap belt wrong
  - 9% of high-backs
- Far too many "tweens" unrestrained

Questions?

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